

REMARKS

This PRELIMINARY AMENDMENT IN AN RCE APPLICATION is filed together with the RCE application. Applicant requests entry of this Amendment before examination.

This Amendment is responsive to the Final Office Action of February 24, 2006 in which Claims 10-19 were indicated to be pending and rejected. With this Amendment, Claims 10 and 15 are amended, and Claims 10-19 are presented for reconsideration and allowance.

Rejections under 35 USC 103

Claims 10-18 were rejected under 35 USC 103(a) over Tanimura et al. US 5,052,229 in view of Khalifa US 4,841,781.

With this Amendment, Claims 10 and 15 are amended to include limitations to the standard sensor interface being common to a plurality of bore size numbers. Support for this amendment can be found at least in FIGS. 6A, 6B; and at page 10, line 25 to page 11, line 3:

Each of the combinations provided as indicated by an X in FIG. 3 includes a standard vortex sensor interface on the unitary flowtube. This arrangement allows finished manufacture of the vortex flowmeter to be completed by simply assembling one of the unitary flowtube combinations with a vortex sensor assembly that is shaped to fit the standard sensor interface.

With this Amendment, Claims 10 and 15 are amended to include limitations to upstream and downstream flanges having nominal pipe sizes of size N, and a bore with a nominal pipe size of a size number that is (N-A) in Claim 10, and at least as small as (N-1) in Claim 15. Support for this amendment can be found at least at page 5, lines 23-27:

FIG. 1 illustrates a table 20 of size numbers of flanged pipes and of vortex flowmeters. As can be seen in FIG. 1, piping systems are designed using nominal pipe sizes such as 1/2 inch, 1 inch, 1-1/2 inch and so forth.

Support for this amendment can also be found at page 6, lines 10-13:

The actual inside diameters of flanged pipes are specified by ASME Standards B36.10, ASME B36.19 and ISO Standards ISO 4200, ISO 1127.

In the "Response to Arguments", the Examiner indicated that Tanimura et al. showed a vortex flowmeter on an internal combustion engine and that it would have been obvious for a flowmeter used with a standard combustion engine to be of standard size. The manufacturing environment of a standard combustion engine may teach standardization to a single air cleaner size, but the combustion engine manufacturing environment does not encompass modular construction of process plants with a plurality of different nominal lines sizes in a process plant. Moreover, the engine application taught by Tanimura et al. contemplates an air cleaner installation rather than nominal pipe sizes for a process control environment. There is no suggestion that an air cleaner would have a passageway that conforms to a flanged process piping size.

Claims 10, 15, as presently amended, include limitations to "the standard sensor interface being common to a plurality of nominal bore size numbers. This feature, which is important to modular manufacturability of vortex flowmeters in a process control context, is neither taught nor suggested by Tanimura et al. Tanimura et al. does not teach an interface that is common to a plurality of nominal bore size numbers.

In the "Response to Arguments", the Examiner indicated that Khalifa FIG.1 shows a vortex flow meter with a bore size that is smaller than upstream and downstream flange sizes.

With this Amendment, applicant has clarified Claims 10 and 15 to include limitations to upstream and downstream flanges having nominal pipe sizes of size N, and a bore with a nominal pipe size of a size number that is (N-A) in Claim 10, and at least as small as (N-1) in Claim 15. With this amendment, it becomes clear that Khalifa FIG. 1 shows upstream and downstream flanges that have a nominal pipe size that is the same as the nominal pipe size of the Khalifa FIG. 1 bore. Khalifa does not teach or suggest upstream and downstream flanges having nominal pipe sizes of size N, and a bore with a nominal pipe size of size (N-A) (Claim 10) or a bore with a nominal pipe size at least as small as (N-1) (Claim 15). Nominal bore sizes (N-A) and (N-1) are different than N, and are not the same as N.

As explained above, neither Tanimura et al. nor Khalifa, taken singly or in combination, teach or suggest a vortex flowmeter with a combination of features as presently claimed in amended Claims 10, 15. Reconsideration and allowance of Claims 10, 15 are therefore requested.

Claims 11-14, 16-19 include limitations that, when taken in combination with the limitations of presently amended base Claims 10, 15 are not obvious. Reconsideration and allowance of Claims 11-14, 16-19 are therefore requested.


Claims 14, 19 were rejected under 35 USC 103(a) over Tanimura et al. in view of Khalifa, as applied to claims 10 and 15 above, and further in view of Kleven US 6,658,945. Claims 14 and 19 include limitations to the diameter expanders and flanges being in place for the calibration. This feature is not taught by Kleven. It is noted that Kleven FIGS. 4, 8, 10 do not show any expanders. The nominal pipe size is not expanded in Kleven FIGS. 4, 8, 10.

For these reasons, Claims 14 and 19 appear to be non-obvious and allowable. Reconsideration and allowance of Claims 14 and 19 are therefore requested.

With these amendments, the application appears to be in condition for allowance, and favorable action is requested. The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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